

Highway-Railroad Grade Crossings

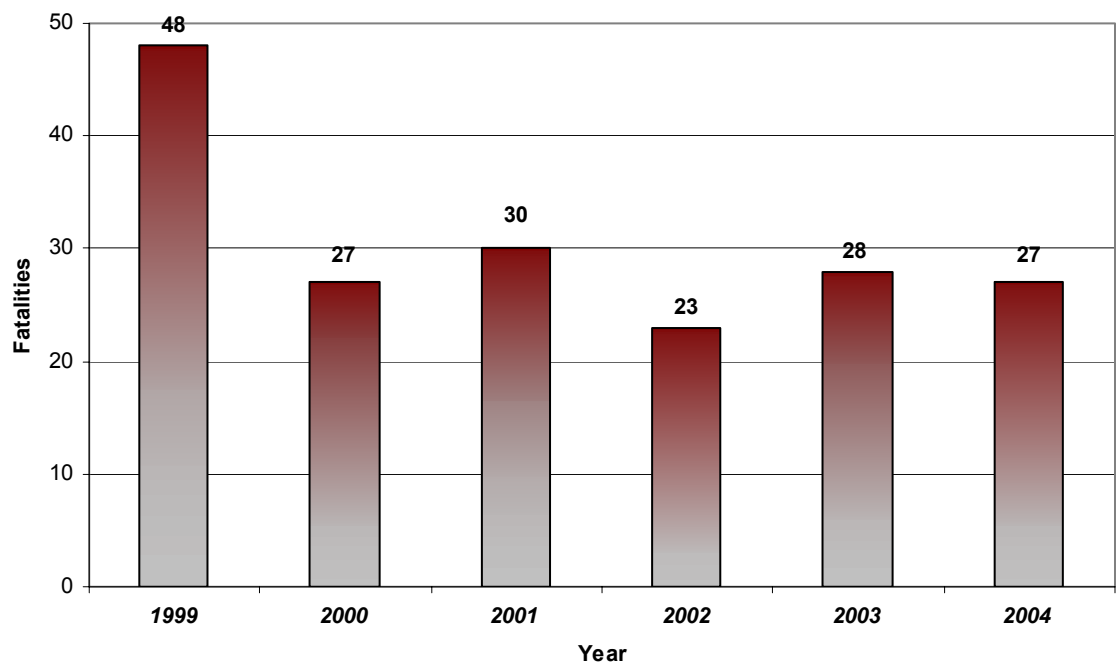
Background

Illinois has the second largest railroad network in the nation, and the Chicago area is its largest single point of rail traffic interchange where all major railroads meet. Illinois has approximately 7,300 miles of railroad line and 8,485 public highway-railroad grade crossings. Of these crossings, 7,632, or 90 percent, are on the local system. Furthermore, there are 5,000 private highway-railroad grade crossings and 300 pedestrian-railroad grade crossings in the state.

The railroad safety environment in Illinois is characterized by intense use of both the rail and highway systems. Rail ton-miles of travel, as well as highway vehicle miles traveled, have both increased by over 30 percent during the past ten years. In the same time frame, the number of rail-related incidents has declined by approximately half. Refer to Figure 8.

Crashes at public highway-railroad grade crossings accounted for 27 fatalities in 2004. While vehicle-train crashes are not as frequent as other types of traffic crashes, they tend to be more severe than a typical vehicle-vehicle crash. A vehicle-train crash is over 11 times more likely to result in a fatality and 5.5 times more likely to result in a life-altering injury than crashes not involving a train.

Figure 7. Illinois Public Highway-Railroad Grade Crossing Fatalities



Source: Illinois Commerce Commission

Illinois experienced two of the most tragic highway-railroad grade crossing crashes in recent U.S. history:

Bourbonnais – March 15, 1999

When Amtrak Train No. 59 struck a tractor-trailer hauling steel products at the McKnight Road grade crossing, 11 passengers were killed and 122 others injured.

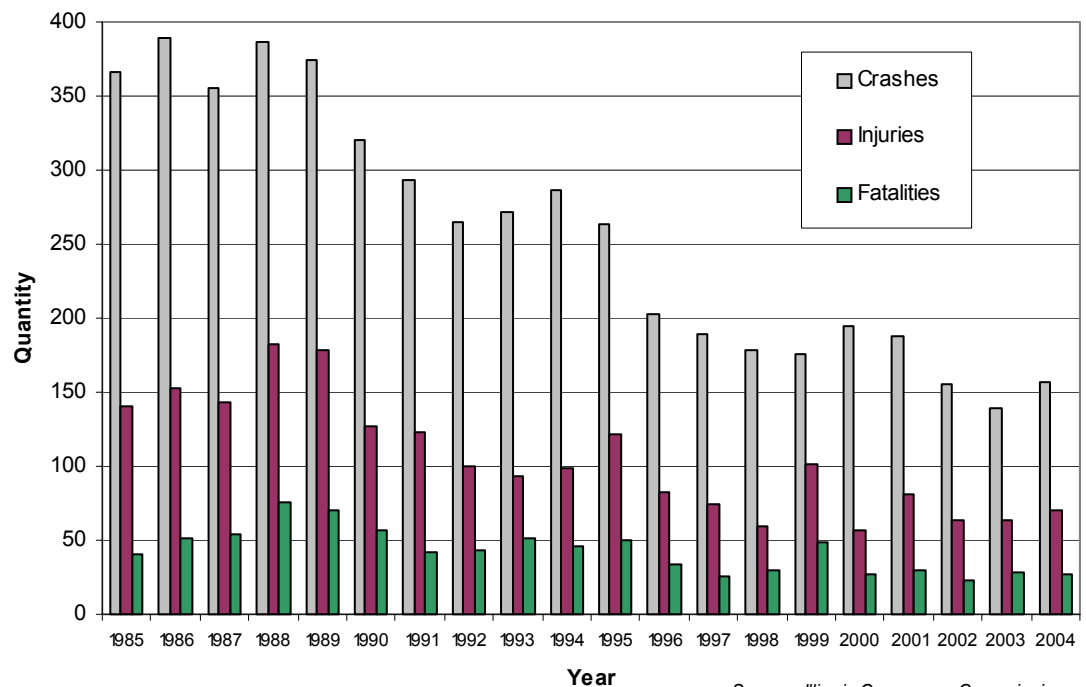
Fox River Grove – October 25, 1995

When a Metra train struck a school bus at the Algonquin Road grade crossing, 7 passengers were killed and 24 others injured.

During the past ten years, Illinois has seen significant reductions among vehicle-train crashes and fatalities. Refer to Table 1.

TABLE 1	<u>1995</u>	<u>2004</u>	<u>Change</u>	<u>Reduction</u>
<i>Vehicle-Train Crashes</i>	263	157	106	40%
<i>Vehicle-Train Fatalities</i>	50	27	23	46%

Figure 8. Illinois Public Grade Crossing Crashes: 1985-2004



Source: Illinois Commerce Commission

The Federal Railroad Administration (FRA) published its final rule pertaining to the “Use of Locomotive Horns at Highway-Rail Grade Crossings” on April 27, 2005. The effective date of the final rule was June 24, 2005. This will need to be considered as safety efforts are made to reduce vehicle-related fatalities.

Recent Implemented Strategies

- Continued support of Operation Lifesaver efforts to educate motorists on the hazards of highway-railroad grade crossings and the motorists’ responsibility to comply with existing rail-crossing laws.
- Continued enforcement activities through Illinois Operation Lifesaver and Public Education and Enforcement Study (PEERS) programs.
- Operated an in-service grade crossing automatic enforcement system (DuPage County).
- Designed and installed state-of-the-art, four-quadrant gate systems equipped with trapped vehicle detection.
- Improved highway-railroad warning systems interconnected with highway traffic signal systems.
- Installed electronic monitoring devices at grade crossings equipped with active warning devices, enabling immediate notification of signal malfunctions.
- Implemented low-cost safety improvements at unsignalized grade crossings.
- Enforced compliance of state and federal signing, marking, signal, gate, and other warning device installation standards.
- Comprehensive review by Illinois Commerce Commission (ICC) to pursue closure of nonessential highway-railroad grade crossings.
- Performed comprehensive engineering grade crossing reviews, including corridor-based studies.
- Initiated a statewide project to upgrade all crossings marked with only passive crossbuck warning signs with reflectorized striping and a corresponding yield or stop sign.
- Drivers Education Packets are distributed to high schools and school bus companies.

Challenges

- 8,485 public highway-railroad grade crossings in Illinois:
 - 7,623 crossings on the local system
 - 862 crossings on the state system
- Increasing volumes of rail and highway traffic.
- Quantifying queue crashes while waiting for trains.
- Quantifying run-off-road crashes where railroad signs/signals are hit.
- Large number of at-grade crossings increase train passenger exposure.
- Dense commuter rail network in northeastern Illinois.
- Adverse public reactions to public grade crossing closures.
- Train horn ban regulations.
- Identification of grade crossings on crash report.
- Train not listed as a vehicle type on crash report.

Proposed Strategies

- Develop new high-visibility and high-profile law enforcement programs to reduce rail signal and gate violations.
- Promote automated enforcement of grade crossing violations.
- Investigate use of signs with Radio Frequency Identification (RFID) chips that can capture gate violation data.
- Provide special consideration to grade crossings within work zones.
- Determine where increased railway traffic is occurring.
- Pursue safety analysis information for northeastern Illinois prepared by the Chicago Area Transportation Study (CATS).
- Consider suicide-by-train issues as addressed by IDPH's Illinois Suicide Prevention Task Force.
- Investigate all recent implemented strategies for success.